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Further Aphodiinae from the Eastern Nepal Himalayas*) (Coleoptera : Scarabaeidae)

By Zdzisława Stebnicka, Cracow

With 24 figures

Summary

25 species of Aphodiinae are recorded from the upper Arun Valley eastward to the Sikkim/Darjeeling border in East Nepal, including five species described as new to science: *Aphodius (Alocoderus) wolfgangi* **n. sp.**, *A. (Pleuraphodius) ilamensis* **n. sp.**, *A. (Paremadus) sabhae* **n. sp.**, *A. (P.) kanglae* **n. sp.** and *Aegialia (Silluvia) simbuae* **n. sp.**

Zusammenfassung

25 Arten der Aphodiinae aus Ost-Nepal vom oberen Arun Tal ostwärts bis zur Sikkim/Darjeeling-Grenze werden behandelt, darunter 5 neu beschrieben: *Aphodius (Alocoderus) wolfgangi* **n. sp.**, *A. (Pleuraphodius) ilamensis* **n. sp.**, *A. (Paremadus) sabhae* **n. sp.**, *A. (P.) kanglae* **n. sp.** und *Aegialia (Silluvia) simbuae* **n. sp.**

Contents

*) Results of the Himalaya Expeditions of J. Martens, No. 161. – No. 160: Spixiana, 13 (1990). – J. M. sponsored by Deutscher Akademischer Austauschdienst and Deutsche Forschungsgemeinschaft.

Fig. 1a. Expedition route 1988 of J. MARTENS & W. SCHAWALLER in East Nepal (*stippled line*). The *numbers* refer to the collecting localities and are given also in the respective material sections preceding every species.

1. Introduction

Dr. WOLFGANG SCHAWALLER has kindly submitted to me for examination the interesting collection of Aphodiinae made by him and by Prof. Dr. JOCHEN MARTENS (Mainz) during the expedition to Eastern Nepal in 1988 (collecting localities see fig. 1a). The material consists of nearly 500 specimens belonging to 25 species, among which the cryptobiotic, litter-inhabiting species are well represented because of the collecting methods. It was collected between 270 m and nearly 4300 m and gives an excellent view of vertical distribution of the species concerned in this part of the Himalayas (fig. 1b) during spring and early monsoon period (beginning April to end of June).

The following contribution based on this material is a continuation of a series of papers dealing with Himalayan Aphodiinae, and presents a fraction of the complete list of Nepalese species given by STEBNICKA (1986, 1989) as well as the new species described herein.

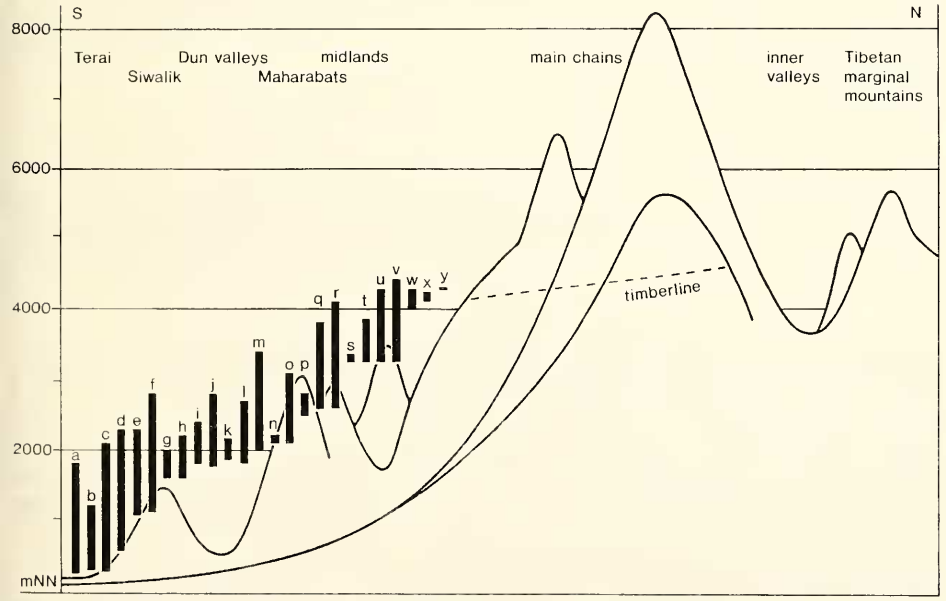


Fig. 1b. Vertical distribution of Aphodiinae species in the Eastern Nepal Himalayas resulting from the collections in 1988 and from STEBNICKA, 1986. – a) *A. urostigma,* b) *A. crenatus,* c) *A. immarginatus,* d) *A. costatulus,* e) *A. fasciger,* f) *A. gregori,* g) *A. teyrovskyi,* h) *A. wolfgangi* n. sp., i) *A. mureensis,* j) *O. nubigenus,* k) *A. peculator, l) A. hindustanicus, m) A. irregularis,* n) *A. ilamensis* n. sp., o) *A. jubingensis,* p) *Aeg. wittmeri,* q) *A. nepalensis,* r) *A. trisuliensis,* s) *Aeg. simbuae* n. sp., t) *A. angustiarum,* u) *A. langtangicus, v) A. jacksoni,* w) *A. sabhae* n. sp., x) *A. kanglae* n. sp., y) *A. montisamator.* – *O. arunae* is only later included in the text and is not considered in this figure, its range is 1050–2000 m.

The main part of the collection, including all holotypes, has been deposited in the Staatliches Museum für Naturkunde, Stuttgart (*SMNS*); some paratypes, as well as some other duplicate specimens are housed in the Institute of Systematic and Experimental Zoology, Cracow (*ISEZ*). A few duplicates are preserved in the collection of Dr. R. Pittino, Milano.

I thank Prof. Dr. Jochen Martens (Mainz) and Dr. Wolfgang Schawaller (Stuttgart) for the loan of the Himalayan material and assistance with the publication.

2. List of the species

2.1. *Aphodius*

2.1.1. *Aphodius (Loboparius) immarginatus* A. Schmidt

Material: *312*[1] – Ilam Distr., between Nodia Khola Valley to Soktim, 240–500 m, dry *Shorea* forest, 7. IV. 1988 (1 ex.); *329*[1] – Panchthar Distr., between Paniporua and Hinwa Khola Valley, 2300–1850 m, tree-rich cultural land, 20. IV. 1988 (1 ex.); *332* – Taplejung Distr., from Yektin to Worebung Pass, 1500–1800 m, cultural land, 21. IV. 1988 (6 ex.); *335* – descent from Worebung Pass to Uyam, 2000–1500 m, tree-rich cultural land, 21. IV. 1988 (1 ex.); *340* – ascent to Khebang from Tada Khola, 1500 m, sacred forest remnant, 25. IV. 1988 (1 ex.); *348* – from Khebang to pass NW Khebang, 1700–2100 m, degraded forest, bushes, 25. IV. 1988 (1 ex.); *414* – Sankhua Sabha Distr., Arun Valley, Chichila, 1900–2000 m, *Quercus* forest and bushes near village, 18.–20. IV. 1988 (2 ex.), leg. Martens & Schawaller.

2.1.2. *Aphodius (Pharaphodius) costatulus* A. Schmidt

Material: *419* – Sankhua Sabha Distr., Arun Valley, Tumlingtar, 550 m, tree-rich cultural land near airport, 21.–22. VI. 1988 (4 ex.), leg. Martens & Schawaller.

2.1.3. *Aphodius (Pharaphodius) crenatus* Harold

Material: *308* – Ilam Distr., 5 km N Sanishare, feet of Siwalik Mts, 270–300 m, mixed *Shorea* forest, 3.–5. IV. 1988 (1 ex.); *338* – Taplejung Distr., from Iwa Khola bridge to Sablako Pass, 940–1200 m, stream bank, 22. IV. 1988 (1 ex.), leg. Martens & Schawaller.

2.1.4. *Aphodius* (s. str.) *fasciger* Harold

Material: *414* – Sankhua Sabha Distr., Arun Valley, Chichila, 1900–2000 m, *Quercus* forest, bushes near village, 18.–20. VI. 1988 (2 ex.), leg. Martens & Schawaller.

2.1.5. *Aphodius* (s. str.) *irregularis* Westwood

Material: *323* – Panchthar Distr., between Gitang Khola Valley and Dhorpar Kharka, 2100–2700 m, mixed broad-leaved forest, 13. IV. 1988 (7 ex.); *324* – Dhorpar Kharka, 2700 m, mature *Rhododendron-Lithocarpus* forest, 13.–16. IV. 1988 (11 ex.); *328* – Paniporua, 2300 m, mixed broad-leaved forest, 16.–20. IV. 1988 (4 ex.); *356* – Taplejung Distr., Omje Kharka, NW Yamputhin, 2300–2500 m, mature mixed broad-leaved forest, 1.–6. V. 1988 (2 ex.); *377* – upper Tamur Valley, below Walungchung Gola, 2400–2700 m, mixed forest, open river bank, 20. V. 1988 (1 ex.); *379* – above Walungchung Gola, 3000–3400 m, bush-rich pastures, 21. V. 1988 (1 ex.); *404* – Sankhua Sabha Distr., above Pahakhola, 2600–2800 m, *Quercus-Rhododendron* forest, 31. V. 1988 (4 ex.), leg. Martens & Schawaller.

[1]) Collecting numbers; see fig. 1a.

2.1.6. *Aphodius (Koshantschikovius) peculator* Balthasar

Material: *412* – Sankhua Sabha Distr., Arun Valley between Mure and Hurure, 2050–2150 m, mixed broad-leaved forest, 17. VI. 1988 (1 ex.); *414* – Arun Valley, Chichila, 1900–2000 m, *Quercus* forest, bushes near village, 18.–20. VI. 1988 (4 ex.); *415* – Arun Valley between Chichila and Bhotebas, 2000–1850 m, *Quercus* forest, 20. VI. 1988 (2 ex.), leg. Martens & Schawaller.

2.1.7. *Aphodius (Acrossus) angustiarum* Balthasar

Material: *361* – Taplejung Distr., upper Simbua Khola Valley near Tseram, 3250–3350 m, mixed mature *Abies-Rhododendron* forest, 10.–15. V. 1988 (1 ex.); *389* – Sankhua Sabha Distr., lower Kangla Khola E Thudam, 3850–3600 m, *Abies-Betula* forest, 25. V. 1988 (19 ex.); *390* – Thudam, 3550–3650 m, mixed forest mainly *Betula* – *Rhododendron*, 25.–27. V. 1988 (3 ex.), leg. Martens & Schawaller.

2.1.8. *Aphodius (Acrossus) jubingensis* Balthasar

Material: *319* – Ilam Distr., Mai Pokhari, 2100–2200 m, *Castanopsis* forest remnants, 9.–10. IV. 1988 (7 ex.); *323* – Panchthar Distr., between Gitang Khola Valley and Dhorpar Kharka, 2100–2700 m, mixed broad-leaved forest, 13. V. 1988 (4 ex.); *328* – Paniporua, 2300 m, mixed broad-leaved forest, 16.–20. IV. 1988 (4 ex.); *356* – Taplejung Distr., Omje Kharka NW Yamputhin, 2300–2500 m, mature mixed broad-leaved forest, 1.–6. V. 1988 (4 ex.); *370* – descent from Deorali Pass to Hellok, 2600–2000 m, mixed forest with bamboo, 17. V. 1988 (2 ex.); *412* – Sankhua Sabha Distr., Arun Valley between Mure and Hurure, 2050–2150 m, mixed broad-leaved forest, 9.–17. VI. 1988 (2 ex.), leg. Martens & Schawaller.

2.1.9. *Aphodius (Acrossus) ritsemai* A. Schmidt

Material: *387* – Sankhua Sabha Distr., Kangla Khola E Thudam, 4100–4200 m, dwarf *Rhododendron*, rock debris, 24.–25. V. 1988 (1 ex.); *389* – lower Kangla Khola E Thudam, 2850–3600 m, *Abies-Betula* forest, 25. V. 1988 (6 ex.); *392* – Sankhua Sabha Distr., from Thudam to Gabri Khola, 4000–4250 m, dwarf *Rhododendron*, 27. V. 1988 (7 ex.); *393* – ascent to Meropapa La from Gabri Khola S Thudam, 4300 m, meadows, dwarf *Rhododendron*, 28. V. 1988 (2 ex.), leg. Martens & Schawaller.

2.1.10. *Aphodius (Paulianellus) mureensis* Stebnicka

Material: *319* – Ilam Distr., Mai Pokhari, 2100–2200 m, *Castanopsis* forest remnants, 9.–10. IV. 1988 (1 ex.); *328* – Panchthar Distr., Paniporua, 2300 m, mixed broad-leaved forest, 16.–20. IV. 1988 (6 ex.); *329* – between Paniporua and Hinwa Khola Valley, 2300–1850 m, tree-rich cultural land, 20. IV. 1988 (13 ex.); *375* – Taplejung Distr., upper Tamur Valley, from bamboo bridge to side valley, 2200–2400 m, broad-leaved forest, 19. V. 1988 (1 ex.), leg. Martens & Schawaller.

2.1.11. *Aphodius (Paulianellus) nepalensis* Balthasar (fig. 2)

Material: *370* – Taplejung Distr., descent from Deorali Pass to Hellok, 2600–2000 m, forest with bamboo, 17. V. 1988 (1 ex.), leg. Martens & Schawaller.

2.1.12. *Aphodius (Paulianellus) jacksoni* Petrovitz (fig. 3)

Material: *361* – Taplejung Distr., upper Simbua Khola Valley near Tseram, 3250–3350 m, mature *Abies-Rhododendron* forest, 10.–15. V. 1988 (27 ex.); *362* – upper Simbua Khola Valley near Yalung, 3450–3700 m, *Abies-Rhododendron-Juniperus* forest, 13. V. 1988 (10 ex.); *381* – above Walungchung Gola, open *Abies* forest and *Rhododendron* bushes, 3600–3800 m, 21. V. 1988 (2 ex.); *383* – Ladza Kharka in Ladza Khola NW Walungchung Gola, 4100–4200 m, dwarf *Rhododendron*, creeping *Juniperus*, 21.–23. V. 1988 (8 ex.);

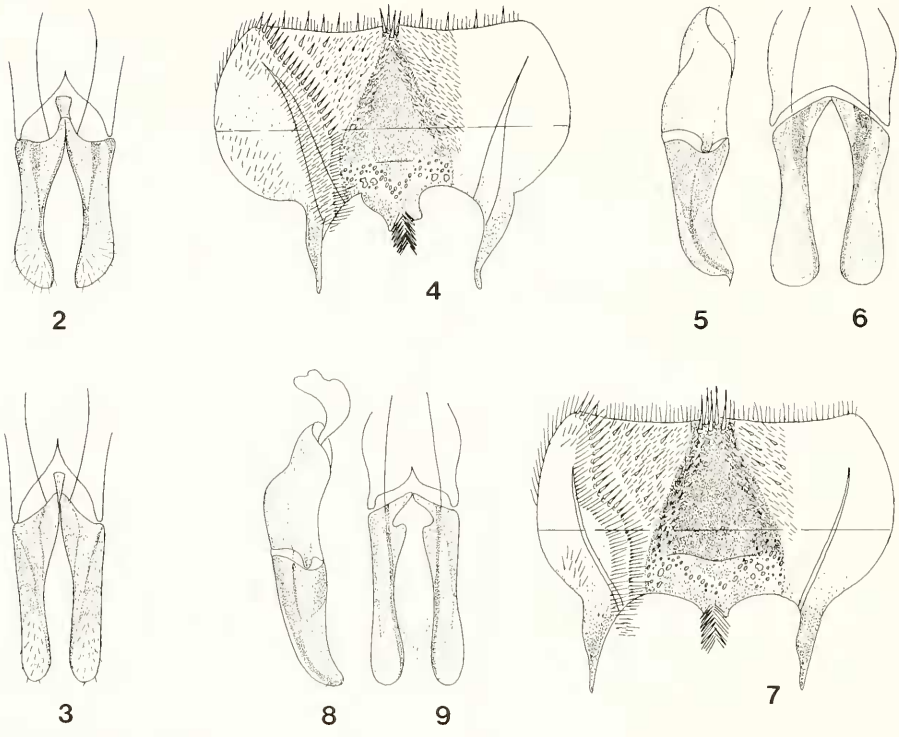


Fig. 2. *Aphodius (Paulianellus) nepalensis* Balthasar, aedeagus (ventral view).
Fig. 3. *Aphodius (Paulianellus) jacksoni* Petrovitz, aedeagus (ventral view).
Figs. 4–6. *Aphodius (Alocoderus) wolfgangi* n. sp. – 4. epipharynx; – 5–6. aedeagus (lateral and dorsal view).
Figs. 7–9. *Aphodius (Pleuraphodius) ilamensis* n. sp. – 7. epipharynx; – 8–9. aedeagus (lateral and dorsal view).

396 – Sankhua Sabha Distr., between Meropapa La and Pomri La, 4300–4400 m, alpine meadows, dwarf *Rhododendron*, 28. V. 1988 (7 ex.), leg. MARTENS & SCHAWALLER.

Remarks: The species was originally described from Yalung (Simbua Khola) and now collected in the vicinity of the locus typicus. The differences in the shape of parameres between two very similar species *A. jacksoni* and *A. nepalensis* are presented in figs. 2–3.

2.1.13. *Aphodius (Paulianellus) trisuliensis* Stebnicka

Material: *324* – Panchthar Distr., Dhorpar Kharka, 2700 m, mature *Rhododendron-Lithocarpus* forest, 13.–16. IV. 1988 (1 ex.); *359* – Taplejung Distr., pasture Lassetham NW Yamputhin, 3300–3500 m, mature *Abies-Rhododendron* forest, 6.–9. V. 1988 (20 ex.); *361* – upper Simbua Khola Valley near Tseram, 3250–3350 m, mature *Abies-Rhododendron* forest, 10.–15. V. 1988 (1 ex.); *378* – upper Tamur Valley, Walungchung Gola, 3000–3200 m, *Tsuga* forest, mainly open river terraces, 20. V. 1988 (4 ex.); *388* – Sankhua Sabha Distr., lower Kangla Khola E Thudam, 4100–3850 m, *Rhododendron*, 25. V. 1988 (1 ex.); *389* – lower Kangla Khola E Thudam, 3850 – 3600 m, *Abies-Betula* forest, 25. V. 1988 (2 ex.); *390* – Thudam, 3550–3650 m, mixed forest, mainly *Betula-Rhododendron*, 25.–27. V. 1988 (16 ex.); *401* – between Pomri La and Pahakhola, 3600–3450 m, *Abies-Rhododendron* forest, bamboo, 30. V. 1988 (2 ex.); *404* – above Pahakhola, 2600–2800 m, *Quercus semecarpifolia-Rhododendron* forest, 31. V. 1988 (1 ex.), leg. MARTENS & SCHAWALLER.

2.1.14. *Aphodius (Trichaphodius) hindustanicus* Balthasar

Material: *329* – Panchthar Distr., between Paniporua and Hinwa Khola Valley, 2300–1850 m, tree-rich cultural land, 20. IV. 1988, (1 ex.); *330* – descent to Hinwa Khola bridge, 1750–1600 m, cultural land, 20. IV. 1988 (1 ex.); *370* – Taplejung Distr., descent from Deorali Pass to Hellok, 2600–2000 m, forest with bamboo, 17. V. 1988 (19 ex.); *374* – upper Tamur Valley from Lungthung water-fall to bamboo bridge, 1800–2150 m, open forest and bushes, 19. V. 1988 (11 ex.); *377* – upper Tamur Valley below Walungchung Gola, 2400–2700 m, mixed forest, open river banks, 20. V. 1988 (2 ex.); *412*– Sankhua Sabha Distr., Arun Valley between Mure and Hurure, 2050–2150 m, mixed broad-leaved forest, 9.–17. VI. 1988 (1 ex.); *414* – Arun Valley, Chichila, 1900–2000 m, *Quercus* forest, bushes near village, 18.–20. VI. 1988 (7 ex.), leg. Martens & Schawaller.

2.1.15. *Aphodius (Balthasarianus) gregori* Balthasar

Material: *351* – Taplejung Distr., Yamputhin, 1650–1800 m, cultural land, open forest, 26. IV. 1988 (3 ex.); *356* – Omje Kharka, NW Yamputhin, 2300–2500 m, mature mixed broad-leaved forest, 1.–6. V. 1988 (5 ex.); *370* – descent from Deorali Pass to Hellok, 2600–2000 m, forest with bamboo, 17. V. 1988 (4 ex.); *372* – between Hellok and lower Gunsa Khola, 2000–1620 m, tree-rich cultural land, 18. V. 1988 (1 ex.); *373* – lower Gunsa Khola to Lungthung, 1650–1870 m, open forest and bushes, 18. V. 1988 (5 ex.); *374* – upper Tamur Valley, from Lungthung water-fall to bamboo bridge, 1800–2150 m, open forest and bushes, 19. V. 1988 (3 ex.); *375* – upper Tamur Valley from bamboo bridge to side-valley, 2200–2400 m, broad-leaved forest, 19. V. 1988 (2 ex.); *377* – upper Tamur Valley below Walungchung Gola, 2400–2700 m, mixed forest, open river bank, 20. V. 1988 (7 ex.); *403* – Sankhua Sabha Distr., Pahakhola, 2550 m, cultural land, bushes, 30.–31. V. 1988 (1 ex.); *404* – above Pahakhola, 2600–2800 m, *Quercus-Rhododendron,* 31. V.–3. VI. 1988 (1 ex.); *409* – Arun Valley bottom, ascent to Num, 1100–1450 m, broad-leaved forest, 8. VI. 1988 (1 ex.); *411*–Arun Valley S Mure, 1900–2100 m, tree-rich cultural land, 8. VI. 1988 (4 ex.); *412* – Arun Valley between Mure and Hurure, 2050–2150 m, mixed broad-leaved forest, 9.–17. VI. 1988 (9 ex.); *413* – Arun Valley between Hurure and Chichila, 2000 m, tree-rich cultural land, 17. V. 1988 (6 ex.); *414* – Chichila, 1900–2000 m, *Quercus* forest, bushes near village, 18.–20. VI. 1988 (5 ex.); *416* – Arun Valley between Bhotebas and Darapangma, 1800–1400 m, cultural land, 20. VI. 1988 (1 ex.), leg. Martens & Schawaller.

2.1.16. *Aphodius (Aganocrossus) urostigma* Harold

Material: *309* – Ilam Distr., from Kutunabari (230 m) to Siwalik Mts pass (320 m) and downhill (240 m), mixed *Shorea* forest, 6. IV. 1988 (2 ex.); *416* – Sankhua Sabha Distr., Arun Valley between Bhotebas and Darapangma, 1800–1400 m, cultural land, 20. VI. 1988 (1 ex.); *419* – Arun Valley, Tumlingtar, 550 m, tree-rich cultural land near airport, 21.–22. VI. 1988 (1 ex.), leg. Martens & Schawaller.

2.1.17. *Aphodius (Alocoderus) teyrovskyi* Balthasar

Material: *318* – Ilam Distr., between Ilam and Mai Pokhari, 1600–2000 m, cultural land with trees, 9. IV. 1988 (2 ex.), leg. Martens & Schawaller.

2.1.18. *Aphodius (Alocoderus) wolfgangi* **n. sp.** (figs. 4–6)

Holotype: ♂ (SMNS), Nepal, *319* – Ilam Distr., Mai Pokhari, 2100–2200 m, *Castanopsis* forest remnants, 9.–10. IV. 1988, leg. Martens & Schawaller.

Paratypes: 3 ex. ♂♂ and 4 ex. ♀♀ (SMNS, ISEZ), same data as holotype; 1 ex. ♀ (SMNS), *318* – between Ilam and Mai Pokhari, 1600–2000 m, cultural land with trees, 9. IV. 1988, leg. Martens & Schawaller.

Description: Length 5.5–6.5 mm, greatest width 2.3–3.0 mm. Body oblong oval, convex, minutely shagreened and moderately shining, apex of elytra mat; colour yellowish brown, posterior of head black, disc of pronotum, scutellum and elytral striae darkened, elytra with blackish spots which are very variable, in some specimens 2/3 of elytral surface blackish; femora and metasternum yellowish.

Head trapezoid, moderately convex, clypeal margin reflexed and rounded each side of shallow but distinct median emargination, sides nearly straight toward obtusely rounded, slightly protrudent genae; clypeal median convexity small, frontal suture well marked, surface punctures fine and dense, separated by less than their diameters.

Pronotum rectangular, anterior edge with distinct marginal line, sides and base laterally finely margined, at middle of base the marginal line is broken; surface punctures moderate in size with intermixed slightly finer punctures similar to those of the head, the punctures generally separated by their diameters.

Scutellum triangular, punctate, sometimes with small longitudinal carina.

Elytra widest behind the middle and inconspicuously setaceous at apex, striae deep with a row of distant punctures crenating inner margins of the intervals; intervals convex on the disc, slightly carinate in apical declivity, with fine punctures concentrated along the striae and at shoulders; flight wings well developed.

Under side of the body shagreened; metasternum convex and finely punctate, femora with fine punctures bearing short setae; abdominal sterna punctate and shortly piliferous.

Legs slender; lateral teeth of fore tibia well separated, terminal spur in both sexes straight and sharply pointed; middle and hind tibiae with distinct transverse ridges, apical setae nearly equal in length, apical spurs slender, slightly curved externally; first segment of posterior tarsus one-third longer than the upper tibial spur and shorter than the next three segments combined.

Epipharynx: Epitorma and tormae lightly sclerotized; the bristles of the chaetoparia short and thin, the setae of the pedium closely distributed, gradually decreasing in length toward the epitorma.

Male: Frons with smal transverse lateral tubercles and with median, conical tubercle located just behind a small clypeal convexity.

Female: The lateral frontal tubercles smaller than in male, median tubercle lacking, clypeal convexity larger.

Remarks: The new species is related to *A. semenovi* Reitter, but it differs significantly by colour and size, by the punctures of pronotum and the sculpture of elytra.

Derivatio nominis: I dedicate this species to Dr. Wolfgang Schawaller (Stuttgart), one of the collectors.

2.1.19. *Aphodius (Pleuraphodius) ilamensis* n. sp. (figs. 7–9)

Holotype: ♂ (SMNS), Nepal, *319* – Ilam Distr., Mai Pokhari, 2100–2200 m, *Castanopsis* forest remnants, 9.–10. IV. 1988, leg. Martens & Schawaller.

Description: Length 5.2 mm, greatest width 2.5 mm. Body oblong oval, minutely shagreened, moderately shining; colour brown, sides of pronotum, base of elytra and under side of the body yellowish brown.

Head moderately convex, frontal suture well marked with a trace of median tubercle; clypeal margin finely reflexed, broadly rounded laterally of shallow median emargination, sides feebly arcuate toward obtusely rounded, slightly protruding

genae; surface punctures fine but deep, uniformly and closely distributed, separated by less than their diameters.

Pronotum rectangular, sides and base finely margined, basal marginal line near posterior angles minutely crenate; surface punctures slightly larger than those of the head, uniformly distributed, generally separated by their diameters.

Scutellum triangular with a few shallow punctures.

Elytra widest just behind the middle, humeri rounded without denticles; all striae rather narrow with a row of fine distant punctures bordered laterally by very fine continuous line; intervals 1–8 obtusely cariniform, minutely shagreened at middle and strongly shagreened on the sides with fine punctures concentrated along the striae; the two lateral intervals convex but less elevated than the remaining.

Metasternum moderately convex, midline feebly impressed, surface finely punctate; abdominal sterna shagreened, punctate and shortly piliferous.

Legs moderate in length; lateral teeth of fore tibia well separated and sharply pointed, terminal spur slender and acute; middle and hind tibiae with well developed transverse ridges, apical setae unequal in length, apical spurs slender and sharply pointed; first segment of posterior tarsus longer than the upper tibial spur and nearly equal in length to the next three segments combined.

Epipharynx: The bristles of the chaetoparia and the chaetopedium rather thin and short, equal in size; the epitorma with very short setae.

Female unknown.

Remarks: *A. ilamensis* n. sp. is distinguishable from the other Palaearctic – Oriental species of *Pleuraphodius* by its unusual size. It is close to *A. confinis* A. Schmidt distributed in Ethiopian Region, but differs in the pattern of punctures on the head and pronotum.

2.1.20. *Aphodius (Paremadus) langtangicus* (Stebnicka) (figs. 10–11)

Material: *361* – Taplejung Distr., upper Simbua Khola Valley, near Tseram, 3250–3350 m, mature *Abies-Rhododendron* forest, 10.–15. V. 1988 (21 ex.); *362* – upper Simbua Khola Valley, near Yalung, 3450–3700 m, *Abies-Rhododendron-Juniperus* forest, 13. V. 1988 (1 ex.); *381* – above Walungchung Gola, 3600–3800 m, open *Abies* forest, *Rhododendron* bushes, 21. V. 1988 (1 ex.); *389* – Sankhua Sabha Distr., lower Kangla Khola E Thudam, 3850–3600 m, *Abies-Betula* forest, 25. V. 1988 (2 ex.); *390* – Thudam, 3550–3650 m, mixed forest, mainly *Betula-Rhododendron*, 25.–27. V. 1988 (1 ex.); *392* – from Thudam to Gabri Khola, 4000–4250 m, dwarf *Rhododendron*, *27. V. 1988* (1 ex.), leg. Martens & Schawaller.

Complementary description: The last segment of maxillary palpus narrow, widest at middle (fig. 11).

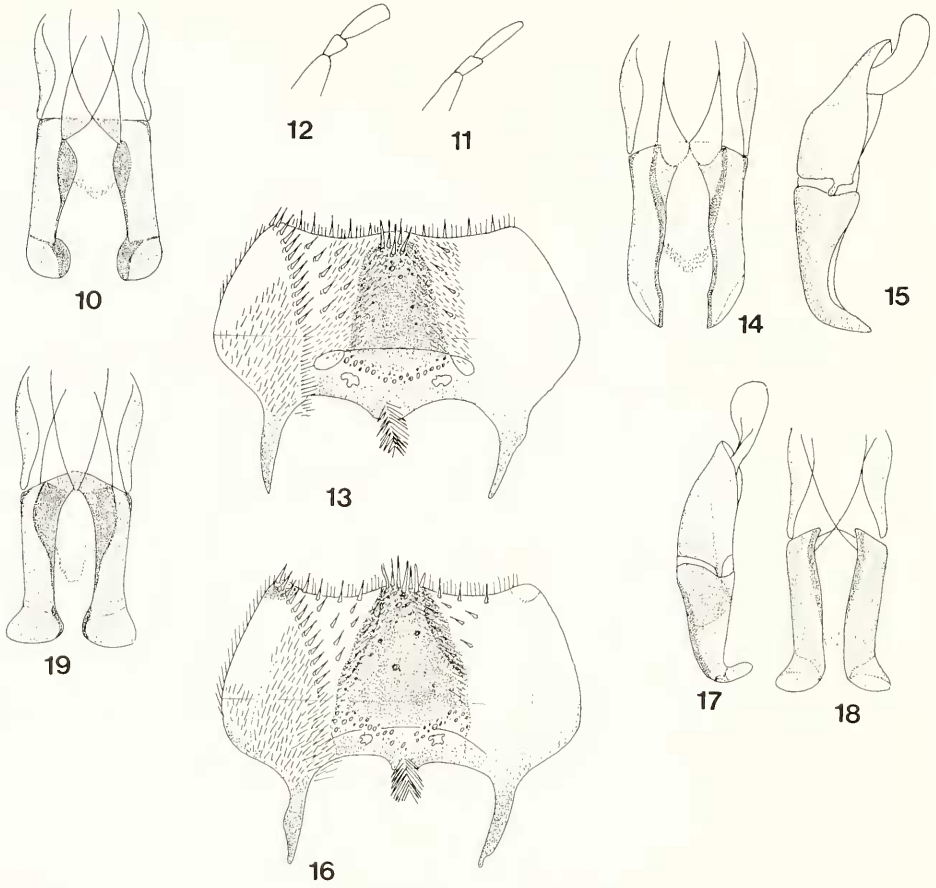
Male: The pronotum is somewhat wider than in female, under spur of middle tibia very short, spiniform and bent downwards. Parameres as in fig. 10.

2.1.21. *Aphodius (Paremadus) sabhae* n. sp. (figs. 12–15, 20)

Holotype: ♂ (SMNS), Nepal, *392* – Sankhua Sabha Distr., from Thudam to Gabri Khola, 4000–4250 m, dwarf *Rhododendron*, 27. V. 1988, leg. Martens & Schawaller.

Paratypes: 4 ex. ♂♂ and 1 ex. ♀ (SMNS, ISEZ), same data as holotype.

Description: Length 4.5–4.8 mm, greatest width 1.8–2.0 mm. Body oval, convex, shining; fore body black, elytra brown, legs reddish brown, femora lighter



Figs. 10–11. *Aphodius (Paremadus) langtangicus* (Stebnicka). – 10. aedeagus (ventral view); – 11. palpus maxillaris.
Figs. 12–15. *Aphodius (Paremadus) sabhae* n. sp. – 12. palpus maxillaris; – 13. epipharynx; – 14–15. aedeagus (lateral and ventral view).
Figs. 16–18. *Aphodius (Paremadus) kanglae* n. sp. – 16. epipharynx; – 17–18. aedeagus (lateral and ventral view).
Fig. 19. *Aphodius (Paremadus) annapurnae* Stebnicka, aedeagus (ventral view).

than the tibiae, metasternum yellowishbordered and with two diagonal yellow spots on each side.

Head moderate in size, clypeal margin finely reflexed, rounded laterally of narrow and shallow median emargination, sides feebly arcuate toward somewhat depressed, small, more or less obtusely rounded genae; median convexity inconspicuous, frontal suture nearly invisible; surface shining, everywhere closely punctate, anterior of head with mixed fine and larger, deep punctures separated by less than their diameters, above the frontal suture only fine punctures are densely spaced; the last segment of maxillary palpus thick, widened toward apex.

Pronotum moderately convex, anterior angles obtusely rounded, sides narrowly margined and arcuate toward obtuse posterior angles; base margined only near posterior angles, the edge with a row of fine, distant punctures sometimes lacking near

scutellum; surface punctures mixed very fine and moderate, the latter the same size as those of the clypeus, irregularly spaced on the disc, more concentrated at sides where they are separated by their diameters.

Scutellum triangular, impunctate, slightly convex apically.

Elytra convex, widest behind the middle, immargined basally, humeri very minutely dentate, humeral tubers distinct, flight wings well developed; elytral striae impressed, the distant punctures moderate in size, finely crenating inner margins of the intervals; intervals feebly convex, shining, impunctate.

Metasternum convex with rather dense, moderate punctures; abdominal sterna shagreened, finely punctate and shortly piliferous.

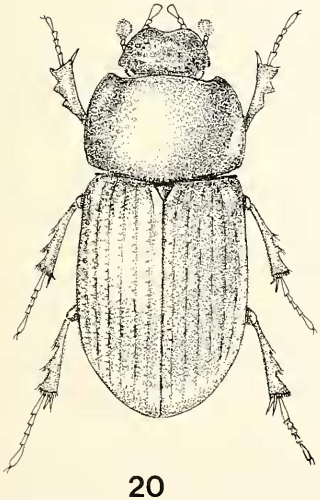
Legs moderate in length; lateral teeth of fore tibia well separated and sharply pointed, the third tooth very small, apical spur straight and acute in both sexes; middle and hind femora finely punctate; middle and hind tibiae with fine transverse ridges, apical setae short, nearly equal in length, apical spurs short and thin; first segment of posterior tarsus twice as long as the upper tibial spur and equal in length to the next three segments combined.

Epipharynx: Epitorma well sclerotized; the bristles of the chaetoparia rather short and thin, 10–12 bristles of the chaetopedium shorter, the same thickness as those of the chaetoparia; the remaining setae of the paria and pedium short and thin.

Male: Pronotum somewhat wider than in female, under spur of middle tibia very small, spiniform, directed down.

Female: Under spur of middle tibiae somewhat longer than in male, spiniform and straight.

Remarks: *A. sabhae* n. sp. is very close to *A. langtangicus* (Stebnicka) and to *A. annapurnae* Stebnicka in overall appearance. It may be distinguished from both mentioned species by the characters of male genitalia (figs. 10, 19), and by deep and dense punctation of head. On the other hand, the punctures of pronotum in *A. annapurnae* are notably finer and less closely distributed than in *langtangicus* and *sabhae* n. sp.



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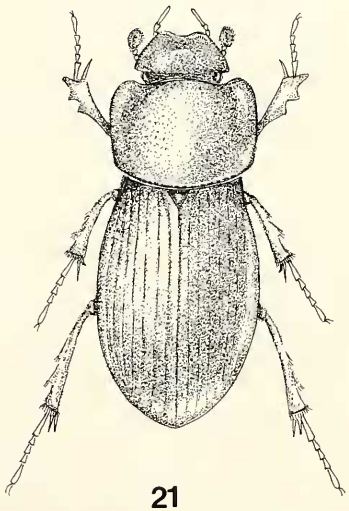

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Fig. 20. *Aphodius (Paremadus) sabhae* n. sp., habitus.
Fig. 21. *Aphodius (Paremadus) kanglae* n. sp., habitus.

2.1.22. *Aphodius (Paremadus) kanglae* **n. sp.** (figs. 16–18, 21)

Holotype: ♂ (SMNS), Nepal, *387* – Sankhua Sabha Distr., Kangla Khola E Thudam, 4100–4200 m, dwarf *Rhododendron*, rock debris, 24.–25. V. 1988, leg. MARTENS & SCHAWALLER.

Paratypes: 7 ex. ♂♂ and 12 ex. ♀♀ (SMNS, ISEZ), the same data as holotype.

Description: Length 4.0–4.8 mm, greatest width 1.8–2.0 mm. Body oval, convex, shining; colour black, apex of elytra and legs dark reddish brown, antennal clubs dark.

Head trapezoid with small convexity at middle, clypeal margin very finely reflexed and obtusely rounded laterally of distinct median emargination, sides nearly straight to somewhat depressed, right-angled and slightly protruding genae; frontal suture feebly marked by narrow line; anterior of head alutaceous and shallowly rugose, the remaining part of surface shining with fine punctures separated by their diameters.

Pronotum convex on the disc, slightly deplanate near rounded anterior angles, sides narrowly margined and arcuate toward obtuse, somewhat protruding posterior angles; base without marginal line, faintly emarginate near posterior angles and finely crenate by close punctures; surface everywhere uniformly, finely punctate, the punctures on the disc separated by one or two their diameters become more concentrated toward the sides.

Scutellum triangular, convex apically, nearly impunctate.

Elytra oval, strongly convex, humeri very finely but sharply dentate, base narrowly margined, humeral tubers vanishing; wings brachypterous, reduced in length to the half of elytra; elytral striae very narrow and shallow with fine and shallow punctures not crenating inner margins of the intervals, sometimes the punctures in the two inner striae and in the two-three lateral striae are deeper and more distint; intervals nearly flat, shining with very minute, scattered punctures.

Under side of the body shagreened; metasternum convex with coarse, dense punctures; abdominal sterna punctate and shortly piliferous.

Legs rather long; middle and hind femora with coarse punctures bearing minute yellow setae; lateral teeth of fore tibia small, sharply pointed, apical spur thin and acute, slightly directed inwardly in both sexes; middle and hind tibiae slender, transverse ridges distinct, apical setae short and unequal in length, apical spurs short and thin; bottom spur of middle tibia very short, spiniform; first segment of posterior tarsus nearly two times as long as the upper tibial spur and slightly shorter than the next three segments combined.

Epipharynx: Epitorma well sclerotized; the bristles of the chaetoparia rather short and thin; 8–9 bristles of the chaetopedium shorter and somewhat thicker than those of the chaetoparia; the remaining setae of the paria and pedium short and thin.

Male: The body mostly smaller than in female, elytra somewhat shorter, head narrower; under spur of middle tibia directed down.

Female: Under spur of middle tibia straight.

Variability: In some specimens the punctation of pronotum and the punctures of elytral striae are more pronounced, in some the proportions of posterior tarsal segments are unstable.

Remarks: *A. kanglae* n. sp. belongs to the group of flightless species described hitherto from the Punjab Himalayas (STEBNICKA, 1989). It differs externally from the mentioned species by the lack of basal marginal line of pronotum and by a fine sculpture of upper surface of the body.

2.2. *Oxyomus*

2.2.1. *Oxyomus nubigenus* Petrovitz

Material: *319* – Ilam Distr., Mai Pokhari, 2100–2200 m, *Castanopsis* forest remnants, 9.–10. IV. 1988 (7 ex.); *320* – between Mai Pokhari and Gitang Khola Valley, 2100–1750 m, tree-rich cultural land, 11. IV. 1988 (14 ex.); *323* – Panchthar Distr., between Gitang Khola Valley and Dhorpar Kharka, 2100–2700 m, mixed broad-leaved forest, 13. IV. 1988 (4 ex.); *328* – Paniporua, 2300 m, mixed broad-leaved forest, 16.–20. IV. 1988 (4 ex.); *356* – Taplejung Distr., Omje Kharka NW Yamputhin, 2300–2500 m, mixed forest, 1.–6. V. 1988 (4 ex.); *404* – Sankhua Sabha Distr., above Pahakhola, 2600–2800 m, *Quercus semecarpifolia-Rhododendron* forest, 31. V.–3. VI. 1988 (1 ex.), leg. MARTENS & SCHAWALLER.

2.2.2. *Oxyomus arunae* Stebnicka

Material: *371* – Taplejung Distr., Hellok in Tamur Valley, 2000 m, forest remnant, bushes, 17. V. 1988, (1 ex.), leg. MARTENS & SCHAWALLER.

2.3. *Aegialia*

2.3.1. *Aegialia (Silluvia) simbuae* n. sp. (figs. 22–24)

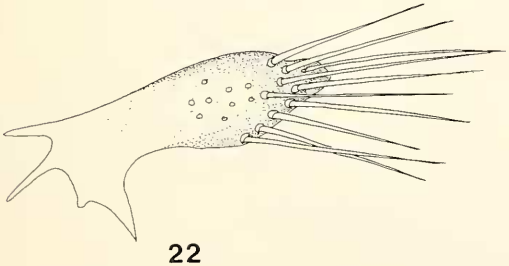
Holotype: ♂ (SMNS), Nepal, *361* – Taplejung Distr., upper Simbua Khola Valley near Tseram, 3250–3350 m, mature *Abies-Rhododendron* forest, 10.–15. V. 1988, leg. MARTENS & SCHAWALLER.

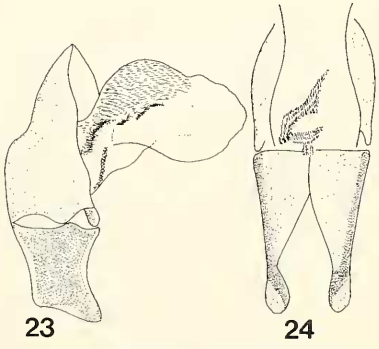
Paratypes: 7 ex. ♀♀ (SMNS, ISEZ), same data as holotype.

Description: Length 8.5–8.8 mm, greatest width 3.0–3.1 mm. Body elongate, slender, moderately shining; colour carbon black, sides of clypeus before genae and tarsi reddish brown, antennae and palpi yellowish brown.

Head moderately convex, two times as wide as long, with small convexity at middle, clypeal margin finely reflexed, genae very small, rounded, their margins quite continuous with those of the clypeus; frontal suture feebly marked or invisible, clypeal surface with fine and very shallow punctures, above the frontal suture the punctures are larger and deeper, separated by one their diameter; terminal segment of maxillary palpus elongate, widest at middle.

Pronotum convex, sides slightly deplanate near anterior and posterior angles, their margins distinctly reflexed with finely crenate and shortly setaceous marginal line, base slightly sinuate, bordered and crenate; disc with two shallow depressions on





Figs. 22–24. *Aegialia (Silluvia) simbuae* n. sp. – 22. genital plate; – 23–24. aedeagus (lateral and dorsal view).

each side; surface punctures moderate to large, the moderate punctures denser from anterior edge toward the sides and around to base, discal punctures large, irregularly spaced, more concentrated in the depressions.

Scutellum triangular with a few fine punctures at base.

Elytra slightly widened toward apex, humeri strongly and sharply dentate, humeral tubers visible, fligth wings well developed; striae 1–6 with moderate punctures distinctly crenating inner margins of the intervals, lateral striae deeper with larger punctures bearing extremely short setae; intervals 1–6 nearly flat with minute, scattered punctures, lateral intervals convex from shoulders to apex.

Metasternum convex, midline impressed, surface with moderate punctures; abdominal sterna minutely punctate and nearly nude, their margins smooth, not crenulate; pygidium convex but without carina, surface shagreened, apex with a row of rather long reddish setae.

Legs slender; the two first lateral teeth of fore tibia short and approximate, the third longer and separate, under side with four denticles gradually decreasing in size toward femur; middle and hind tibiae with transverse ridges, terminal spurs slender; hind tarsus significantly shorter than the tibia, first segment shorter than the upper tibial spur and shorter than the next three segments combined.

Male: Apical spur of anterior tibia bent inward at the tip.

Female: Apical spur of anterior tibia straight. Genital plate as in fig. 22.

Remarks: *Ae. simbuae* n. sp. is close to *Ae. gogona* described from Bhutan (Stebnicka, 1977), but it differs in having larger punctures of pronotum, four denticles on under side of fore tibia and shorter posterior tarsi.

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